BAR CODE MED ADMIN (BCMA)

Pharmacy CHUI User Manual

Version 1.0

August 1999

Department of Veterans Affairs
V*IST***A** Technical Services

TABLE OF CONTENTS

TABLE OF EXHIBITS

1 OVERVIEW

1.1 What is BCMA?

Bar Code Med Admin (BCMA) software is a point-of-care solution for validating the administration of medications. The initial software development and hardware research done at the Eastern Kansas Health Care System, Colmery-O'Neil Division, VISN 15, Heartland Veterans Health Network, is the basis from which the standard product is being built. The existing software functionality, in addition to enhancements identified by a functional workgroup with Nursing and Pharmacy representatives from various Veterans Integrated Services Networks (VISNs), is being replicated with a graphical user interface (GUI) (MS Windows-based) client/server architecture.

Automation of the medication administration process will improve medication administration accuracy and increase the efficiency of documentation. As each patient wristband and medication is scanned by a bar code reader, the software will validate that the medication is ordered, timely, and in the correct dosage—as well as electronically update the medication administration history. BCMA software offers a tool to augment, not replace, the clinical judgment of the medication administrator.

1.2 Features of BCMA

BCMA:

- Increases medication administration accuracy
- Captures drug accountability data
- Increases the information available to Nursing staff at the patient point of care
- Reduces wasted medications
- Improves communication between Nursing and Pharmacy staffs
- Provides a real-time Virtual Due List of orders for medication administration
- Records refused medications
- Records missing doses and sends the requests electronically to the Pharmacy
- Provides a point-of-care data entry/retrieval system
- Provides full compatibility with the existing V*IST*A system
- Identifies PRN entries that require effectiveness comments
- Replaces the manual Medication Administration Record (MAR) with a Medication Administration History (MAH) to provide an automatic record of a patient's medication administration information
- Provides a list of variances that identify early or late medication administrations and late PRN effectiveness entries

1.3 Intranet Documentation

Documentation for this product can now be found on the Intranet at the following address:

http://www.vista.med.va.gov/bcma

At this address is information about BCMA, including background, technical information, and important user documentation.

☞   Remember to bookmark this site for future reference.

2   ABOUT THIS MANUAL

This manual contains a description of the Character-based User Interface (CHUI) options for the Pharmacy user. The manual is organized around the Medication Administration Menu Pharmacy Options. Accessing and using each option is explained. Included with each option are sample screen captures and reports.

An index and glossary are located at the end of this manual.

2.1   Special Instructions for the "First Time" Computer User

Users who are unfamiliar with BCMA or other Veterans Health Information Systems and Technology Architecture (V*IST*A) software applications are encouraged to study the DHCP Decentralized Hospital Computer Program (DHCP) *User's Guide to Computing*. This orientation guide is a comprehensive handbook benefiting first-time users of any V*IST*A application. The purpose of the introductory material is to help users become familiar with basic computer terms and the components of a computer. It is reproduced and distributed periodically by the Kernel Development Group. To request a copy, users should contact their local Information Resources Management (IRM) staff.

2.2   Special Notations—Documentation Conventions

Responses in bold face indicate what the user is to type in. Example: In the Patient/Ward field, type **P** for Patient or **W** for Ward.

Text centered between arrows represents a keyboard key that needs to be pressed in order for the system to capture a user response or move the cursor to another field. **<Enter>** indicates that the Enter key (or Return key on some keyboards) must be pressed. **<Tab>** indicates that the Tab key must be pressed. Example: Press **<Tab>** to move the cursor to the next field, Type **Y** for Yes or **N** for No, and press **<Enter>**.

☛ Indicates especially important or helpful information.

2.3   Package Conventions

Up-arrows (caret or a circumflex)

^   In the CHUI application of BCMA, the user can move back to previous screens by entering a **^** and pressing <**Enter**>. Repeat this process until the desired screen is reached.

2.4   On-line Help

?, ??, ???   On-line help is available by entering one, two, or three question marks at a prompt. One question mark elicits a brief statement of what information is appropriate for the prompt; two question marks elicits more help, plus the hidden actions shown above; and three question marks will provide more detailed help, including a list of possible answers, if appropriate.

3 BCMA MENU—PHARMACY OPTION

3.1 Using the Medication Administration Menu Pharmacy Option

The Pharmacy Option menu of the Bar Code Med Admin (BCMA) allows Pharmacy personnel to access information that has been entered via the graphical user interface (GUI) Virtual Due List (VDL). Because BCMA operates in real time, scanned information is available as soon as the scan is successfully completed. The Pharmacy menu as shown in Exhibit 1, BCMA Medication Administration Menu Pharmacy Option Screen , may be accessed from any **V***ISTA*-enabled terminal within the medical center.

☛ Several of these options are available under both the Nursing and Pharmacy menu options. The options that are unique to Pharmacy include Missing Dose Follow-up, Missing Dose Report, and Label Print.

EXHIBIT 1: MEDICATION ADMINISTRATION MENU PHARMACY OPTION SCREEN
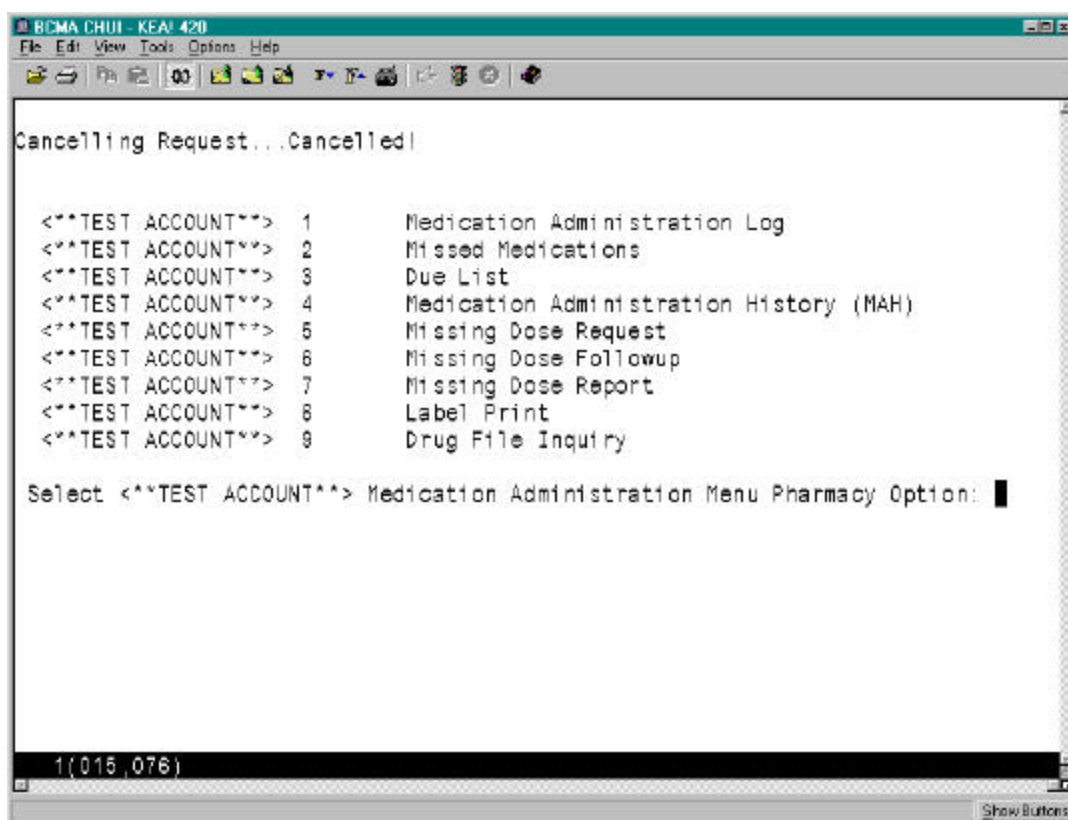
To select any of the options, perform the following steps:
1. The cursor will be flashing at the Select Medication Administration Menu Pharmacy Option prompt at the bottom of the screen.
2. Enter the number of the desired option.
3. Press <**Enter**> to display the sort screen for the option chosen.

3.2 Using ScreenMan Format to Request a Report

Many of the Pharmacy options use a common screen to define selection criteria for reports, as illustrated by Exhibit 2, Report Information Sort Screen. Other options use specific screens. This section explains the screen fields for all reports using the Report Information Sort Screen and gives instructions for entering information. Following this section are sample reports that can be run from each of the Medication Administration Menu Pharmacy options.

EXHIBIT 2: REPORT REQUEST USING SCREENMAN FORMAT

Many of the reports can be sorted and printed in the following ways:
- By patient. The information will display chronologically.
- By ward. The information can be sorted by patient or room/bed, and it will be printed chronologically within patient.

1. In the Start Date field, type in the start date of the report, and press <**Enter**>. (The cursor will move to the next field each time <**Enter**> is pressed.)

☛ To display a list of standard date and time formats, enter **?** in any date or time field, and press <**Enter**>.

2. In the first At field, type the start time of the report (in HHMM format), and press <**Enter**>.
3. In the Stop Date field, type in the stop date, and press <**Enter**>.
4. In the second At field, type the stop time (in HHMM format), and press <**Enter**>.
5. In the Run by Patient or Ward field, type **P** or **W,** and press <**Enter**>.

- (If the report is being sorted by ward) In the Ward Location field, type in the ward designation, and press <**Enter**>. In the Sort by Pt or Room-Bed field, type **P** for Patient or **R** for Room, and press <**Enter**>.
- (If the report is being sorted by patient) In the Patient Name field, type the patient's name, and press <**Enter**>.

☛ To display a list of standard name formats, enter **?** in any Patient Name field, and press <**Enter**>.

8. In the Include Comments field, enter **Y** for Yes or **N** for No, and press <**Enter**>.

☛ If a Yes/No field is blank, just press <**Enter**> to respond No.

9. In the Include Audits field, enter **Y** for Yes or **N** for No, and press <**Enter**>.
10. In the Print to Device field, type in a valid printer, and press <**Enter**>.
11. In the Queue to Run At field press <**Enter**> to accept the date displayed, or enter a date and time and, press <**Enter**>. The report will print at the time and date entered.
12. At the <RET> Re-Edit prompt, press **PF1** (or Num Lock) followed by **E** to submit this report for printing. Other available actions at this prompt are **PF1-Q** to Quit or **PF1-R** to Refresh the screen.

☛ Depending on how the user's facility is configured, either the PF1 key or Num Lock will be active. For consistency, this manual refers to the PF1 convention, but users are advised that PF1 is the same as Num Lock, if that is the active function at their sites.

13. The screen will now clear and the following message will appear: Submitting your report request to Taskman… Submitted! Your Task Number is: ###.

3.3 Medication Administration Log

The Medication Administration Log displays detailed administration information. The report can be sorted and printed by patient or ward, and the user can specify the date and time range that the report covers.

See Section 3.2, Using ScreenMan Format to Request a Report, for instructions on requesting a Missed Medications Report.

The Medication Administration Log will print in a 132-column output. Exhibit 3, Med Log by Patient Report, and Exhibit 4, Med Log By Ward Report, show examples of both Med Log reports.

EXHIBIT 3: MED LOG BY PATIENT REPORT

```
==================================================================================================================
MEDICATION LOG for Apr 14, 1999@00:01 thru Apr 14, 1999@13:00                          Run Date: JUN 10, 1999@09:29
LOG TYPE: INDIVIDUAL PATIENT                                                                              Page: 1

Patient:  KZTAAR,*TEST*KEITH D          SSN:       408-02-9578        DOB:    JAN 2,1941 (58)
Sex:      MALE                          Ht/Wt:     */*                Ward:   BCMA Rm A427-02
Dx:       PNEUMONIA                     Last Mvmt: APR 8,1999@14:07:51 Type:   SPECIALTY TRANSFER

Reactions: STRAWBERRIES
==================================================================================================================
                  Orderable Item                    Admin  Admin
Activity Date     [Dose/Sched/Route/Inj Site]       By     Date/Time      Drug/Solution/Additive      U/Ord  U/Gvn Unit
------------------------------------------------------------------------------------------------------------------
04/14/99 09:00    ARTIFICIAL TEARS [2 GTTS
                  0600-0800-1000-1200-1400-1600-18
                  00-2000-2200 OPH]                 N2     04/14/99 14:00  ARTIFICIAL TEARS /ML         1.00   1.00 2 DROPS
                  Comments:    04/14/99 14:00  N2    I DIDN'T GIVE IT
                               04/14/99 14:03  N2    I GAVE IT TWICE
------------------------------------------------------------------------------------------------------------------
04/14/99 09:04    CEFTAZIDIME [INFUSE OVER 30
                  MIN. Q12H IV Inj Site: Arm,
                  Left Upper]                       N2     04/14/99 09:04  CEFTAZIDIME - 1 GM
                                                                           DEXTROSE 5%/WATER - 50 ML
                  Comments:    <No Comments>
------------------------------------------------------------------------------------------------------------------
04/14/99 09:08    ASCORBIC ACID [500MG
                  MO-WE-FR@0900-1700 PO]            N2     04/14/99 09:08  ASCORBIC ACID 500MG TAB      1.00   2.00 CAP
                  Comments:    04/14/99 14:06  N2   NEW ORDER TO DOUBLE THE DOSE TODAY
------------------------------------------------------------------------------------------------------------------
04/14/99 09:55    MULTIVITAMINS [1TABLET QD PO]     N2     04/14/99 09:57  MULTIVITAMIN TAB             1.00   1.00 TAB
                  Comments:    04/14/99 09:55  N2    Patient Refused
                               04/14/99 09:57  N2    Patient Refused
                               04/14/99 14:04  N2    THIS ISN'T WORKING???
------------------------------------------------------------------------------------------------------------------
04/14/99 09:59    IPRATROPIUM [2 PUFFS Q6H INHL]    N2     04/14/99 09:59  IPRATROPIUM BROMIDE INHALER  1.00   1.00 2 PUFFS
                  Comments:    04/14/99 09:59  N2    PT GOING TO X-RAY
------------------------------------------------------------------------------------------------------------------
04/14/99 09:59    POTASSIUM CHLORIDE [75 ml/hr
                  IV Inj Site: Arm, Right Upper]    N2     04/14/99 09:59  POTASSIUM CHLORIDE - 20 MEQ
                                                                           DEXTROSE 5%/WATER - 1000 ML
                  Comments:    <No Comments>
------------------------------------------------------------------------------------------------------------------
==================================================================================================================
KZTAAR,*TEST*KEITH D                                       408-02-9578                Ward: BCMA  Room-Bed: A427-02
```

EXHIBIT 4: MED LOG BY WARD REPORT

```
=================================================================================================================
Continuing/PRN/Stat/One Time Medication/Treatment Record (Detailed Log) (VAF 10-2970 B, C, D)
Run Date: JUL 26, 1999@10:23
LOG TYPE: WARD
Page: 1

Ward Location: BCMA                                                                         Division: TOPEKA, KS
=================================================================================================================
                 Orderable Item              Admin  Admin
Activity Date    [Dose/Sched/Route/Inj Site]  By    Date/Time     Drug/Solution/Additive          U/Ord  U/Gvn Unit
-----------------------------------------------------------------------------------------------------------------
ARIZONA,BCPATIENT  (509680003)
Ward: BCMA  Rm-Bed: 401-09
-----------------------------------------------------------------------------------------------------------------
04/14/99 09:04  CEFTAZIDIME [INFUSE OVER 30
                MIN. Q12H IV Inj Site: Arm,
                Left Upper]                   N3    04/14/99 09:04  CEFTAZIDIME - 1 GM
                                                                   DEXTROSE 5%/WATER - 50 ML
-----------------------------------------------------------------------------------------------------------------
04/14/99 09:05  POTASSIUM CHLORIDE [75 ml/hr
                IV Inj Site: Arm, Left Upper] N3    04/14/99 09:05  POTASSIUM CHLORIDE - 20 MEQ
                                                                   DEXTROSE 5%/WATER - 1000 ML
-----------------------------------------------------------------------------------------------------------------
04/14/99 14:48  MOISTURIZING LOTION [ PRN TOP] N3   04/14/99 14:48  DRY SKIN LOTION/ML             1.00   0.00
                PRN Reason:   C/O ITCHING
                PRN Effectiveness: NO RELIEF
                    Entered By: STUDENT,NURSE THREE Date/Time: APR 14, 1999@14:49:39 Minutes: 1
-----------------------------------------------------------------------------------------------------------------
04/14/99 14:57  ACETAMINOPHEN [325-650MG Q4H
                PRN PO]                       N3    04/14/99 12:00  ACETAMINOPHEN 325MG TAB        2.00   3.00 TAB
                PRN Reason:   C/O H/A
                PRN Effectiveness: RELEIF
                    Entered By: STUDENT,NURSE THREE Date/Time: APR 14, 1999@14:59:01 Minutes: 179
-----------------------------------------------------------------------------------------------------------------
ARKANSAS,BCPATIENT  (509680004)
Ward: BCMA  Rm-Bed: A415-01

04/14/99 09:00  ARTIFICIAL TEARS [2 DROPS
                0600-0800-1000-1200-1400-1600-18
                00-2000-2200 OPH]             N4    04/14/99 09:00  ARTIFICIAL TEARS /ML           1.00   1.00 2 DROPS
-----------------------------------------------------------------------------------------------------------------
04/14/99 09:04  CEFTAZIDIME [INFUSE OVER 30
                MIN. Q12H IV Inj Site: Arm,
                Right Upper]                  N4    04/14/99 09:04  CEFTAZIDIME - 1 GM
                                                                   DEXTROSE 5%/WATER - 50 ML
-----------------------------------------------------------------------------------------------------------------
04/14/99 09:06  ASCORBIC ACID [500MG
                MO-WE-FR@0900-1700 PO]        N4    04/14/99 09:06  ASCORBIC ACID 500MG TAB        1.00   1.00 TAB
-----------------------------------------------------------------------------------------------------------------
```

3.4 Missed Medications

Medications that were not scanned as administered during an administration time window appear on the Missed Medications report. The report includes missed medication, dosage, and scheduled time. The report can be sorted and printed by ward or patient, and the user can specify the date and time that the report covers.

☛ Information that may appear on this report includes medications that were scheduled to be administered, but were not marked as Given, Held, or Refused. Medications placed on Hold via CPRS or Inpatient Medications V.5.0 will appear on this report with Hold in parentheses.

☛ The missed med by ward report should be run after each scheduled admin time. All entries appearing on this report should be resolved.

See Section 3.2, Using ScreenMan Format to Request a Report, for instructions on requesting a Missed Medications Report.

The Missed Medication reports will print in a 132-column output. Exhibit 5, Missed Medications by Patient Report, and Exhibit 6, Missed Medications by Ward Report, show examples of both Missed Medications reports.

EXHIBIT 5: MISSED MEDICATIONS BY PATIENT REPORT

```
=======================================================================================================================
MISSED MEDICATIONS  from Mar 31, 1999@09:00 thru Mar 31, 1999@13:00
Run Date: MAR 31, 1999@13:19

Page: 1

Patient:  KZTAAR,*TEST*KEITH D          SSN:     408-02-9575          DOB:   JAN 9,1958 (41)
Sex:     MALE                           Ht/Wt:    182cm/80kg          Ward:  MICU-T Rm 401-01
Dx:      IDDM                           Last Mvmt: NOV 3,1998@09:28:57  Type:  SPECIALTY TRANSFER

Reactions:  NKDA, EGGS, STRAWBERRIES
=======================================================================================================================
Administration Date/Time      Medication
-----------------------------------------------------------------------------------------------------------------------

Mar 31, 1999@09:00            ALBUTEROL INHALANT
Mar 31, 1999@09:00            BENZTROPINE TAB
Mar 31, 1999@09:00            CLOTRIMAZOLE CREAM,TOP
Mar 31, 1999@09:00            MULTIVITAMINS TAB

Mar 31, 1999@12:00            POLYVINYL ALCOHOL SOLN,OPH

Mar 31, 1999@13:00            ALBUTEROL INHALANT
Mar 31, 1999@13:00            AMOXICILLIN CAP,ORAL
Mar 31, 1999@13:00            CLOTRIMAZOLE CREAM,TOP
Mar 31, 1999@13:00            WARFARIN TAB
=======================================================================================================================
KZTAAR,*TEST*KEITH D                                   408-02-9575                           Ward: MICU-T Room-Bed:
401-01
```

EXHIBIT 6: MISSED MEDICATIONS BY WARD REPORT

```
MISSED MEDICATIONS  from Mar 31, 1999@09:00 thru Mar 31, 1999@13:00
Run Date: MAR 31, 1999@14:08

Page: 1

Ward Location: 3-1CP
Division: TOPEKA, KS
========================================================================================================
Ward Rm-Bed        Patient                         Administration Date/Time     Medication
--------------------------------------------------------------------------------------------------------

3-1CP-T 31C-31     COSMO,RANDY B (1111)            Mar 31, 1999@09:00           ACETAMINOPHEN TAB
3-1CP-T 31C-31     COSMO,RANDY B (1111)            Mar 31, 1999@09:00           FUROSEMIDE TAB
3-1CP-T 31C-31     COSMO,RANDY B (1111)            Mar 31, 1999@09:00           HALOPERIDOL INJ,SOLN
3-1CP-T 31C-31     COSMO,RANDY B (1111)            Mar 31, 1999@09:00           LANSOPRAZOLE CAP,SA
3-1CP-T 31C-31     COSMO,RANDY B (1111)            Mar 31, 1999@09:00           THIAMINE TAB
3-1CP-T 31C-31     COSMO,RANDY B (1111)            Mar 31, 1999@09:00           THIORIDAZINE TAB
3-1CP-T 31C-31     COSMO,RANDY B (1111)            Mar 31, 1999@09:00           TRIFLUOPERAZINE TAB
3-1CP-T 31C-31     COSMO,RANDY B (1111)            Mar 31, 1999@09:00           WARFARIN TAB

3-1CP-T 31C-31     COSMO,RANDY B (1111)            Mar 31, 1999@13:00           ACETAMINOPHEN TAB
3-1CP-T 31C-31     COSMO,RANDY B (1111)            Mar 31, 1999@13:00           DILTIAZEM TAB
3-1CP-T 31C-31     COSMO,RANDY B (1111)            Mar 31, 1999@13:00           HALOPERIDOL INJ,SOLN
3-1CP-T 31C-31     COSMO,RANDY B (1111)            Mar 31, 1999@13:00           HYDROCORTISONE CREAM,TOP
3-1CP-T 31C-31     COSMO,RANDY B (1111)            Mar 31, 1999@13:00           PHENYTOIN CAP,SA
3-1CP-T 31C-31     COSMO,RANDY B (1111)            Mar 31, 1999@13:00           THIAMINE TAB
3-1CP-T 31C-31     COSMO,RANDY B (1111)            Mar 31, 1999@13:00           THIORIDAZINE TAB


3-1CP-T 31C-44     HTTELMA,*TEST*LUTHER ELISHA (1286)   Mar 31, 1999@09:00      ASPIRIN TAB,EC
3-1CP-T 31C-44     HTTELMA,*TEST*LUTHER ELISHA (1286)   Mar 31, 1999@13:00      ASPIRIN TAB,EC


3-1CP-T 31C-45     TRENRU,*TEST*VEODA M (6931)     Mar 31, 1999@09:00           DOCUSATE CAP,ORAL
```

3.5 Due List

The Medication Due List is a printed copy of the Virtual Due List available in the GUI Menu. The report can be printed for specified date/time ranges and by patient or ward. Within patient or ward, the report may include or exclude the following:

- Continuous, PRN, On-Call, and One-time Schedule Types
- Unit Dose or IV Route medications
- Addendums

To enter information for the report, perform the following steps to enter information on the screen illustrated in Exhibit 7, Due List Report Request Screen.

EXHIBIT 7: DUE LIST REPORT REQUEST SCREEN

1. In the Start Date field, type the date, and press **<Enter>**.
2. In the first At field, type the time, and press **<Enter>**.
3. In the Stop Date field, type a date, and press **<Enter>**.
4. In the second At field, type a time, and press **<Enter>**.
5. In the Run by Patient or Ward field, type **P** for Patient or **W** for Ward, and press **<Enter>**.
   - (If the report is being sorted by patient) In the Patient Name field, type the patient's name, and press **<Enter>**.

- (If the report is being sorted by ward) In the Ward Location, type in the ward designation, and press <**Enter**>. In the Sort by Pt or Room-Bed field, type in **P** for Patient or **R** for Room/bed name, and press <**Enter**>.

6. In the Include Schedule fields, type **Y** for the desired schedule type(s) and **N** for the others and, press <**Enter**>.

7. In the Include Order Types, type **Y** or **N** in the IV field and Unit Dose field and press <**Enter**>. If the user enters **No** in both fields, no orders will print on the report.

8. In the Include Addendums field, type **Y** or **N,** and press <**Enter**>. When **Y** is entered, an additional section called Changes/Addendums to Orders will print at the bottom of the report. This user can use this section to manually record information about a medication administration.

9. In the Print to Device field, type the desired printer, and press <**Enter**>.

10. In the <Ret> Re-Edit field, press the **PF1** followed by **E** (Exit) to submit the request for printing. (Other available actions in this field are **PF1 - Q** to Quit this option or **PF1 - R** to Refresh the screen.)

11. The screen will now clear and the following message will appear: Submitting your report request to Taskman… Submitted! Your Task Number is:###.

The Medication Due List reports will print in a 132-column output. Exhibit 8, Due List by Patient Report, and Exhibit 9, Due List by Ward Report, show examples of both Due List reports.

EXHIBIT 8: DUE LIST BY PATIENT REPORT

```
===============================================================================================================================
MEDICATION DUE LIST for JUL 26, 1999  0800-1000                                              Run Date: JUL 26, 1999@14:39
Order Type(s): IV & Unit Dose  -- Continuous                                                                     Page: 1

Patient:  KZTAAR,*TEST*KEITH D           SSN:       408-02-9578        DOB:    JAN 2,1941 (58)
Sex:      MALE                           Ht/Wt:     */*                Ward:   BCMA Rm A427-02
Dx:       PNEUMONIA                      Last Mvmt: APR 8,1999@14:07:51 Type:   SPECIALTY TRANSFER

Reactions:  STRAWBERRIES
===============================================================================================================================
Self                                                                     Last       Start      Stop    Verifying
Med    Sched   Medication                        Dose                    Given      Date       Date     Rph/Rn
-------------------------------------------------------------------------------------------------------------------------------
       UD-C    ALBUTEROL SOLN,INHL
               *ALBUTEROL 0.083% INHL SOLUTION
                3ML EA. (7014)
               Spec Inst: <None Entered>          Give: 3MML  Q4H
                                                  Admin Times: 0900                06/03/99@0904 07/05/99 08/04/99 RAC/RAC
-------------------------------------------------------------------------------------------------------------------------------
       UD-C    ARTIFICIAL TEARS SOLN,OPH
               *ARTIFICIAL TEARS /ML (7021)
               Spec Inst: WHILE AWAKE             Give: 2 DROPS
                                                  0600-0800-1000-1200-1400-1600-1800-
                                                  2000-2200
                                                  Admin Times: 0800-1000           06/09/99@1609 07/05/99 08/04/99 RAC/RAC
-------------------------------------------------------------------------------------------------------------------------------
                                             Changes/Addendums to orders
-------------------------------------------------------------------------------------------------------------------------------

   CON ___ PRN ___   Drug: _____  Give: _____  Start: _____ Stop: _____
                     Spec
   OT ___  OC ___   Inst: _____ Initials: _____ Date: _____
-------------------------------------------------------------------------------------------------------------------------------

   CON ___ PRN ___   Drug: _____  Give: _____  Start: _____ Stop: _____
                     Spec
   OT ___  OC ___   Inst: _____ Initials: _____ Date: _____
===============================================================================================================================
KZTAAR,*TEST*KEITH D                                    408-02-9578                          Ward: BCMA  Room-Bed: A427-02
```

EXHIBIT 9: DUE LIST BY WARD REPORT

☛ The Due List by Ward Report prints one page per patient.

```
================================================================================================
MEDICATION DUE LIST for JUL 26, 1999  0800-1000                    Run Date: JUL 26, 1999@14:43
Order Type(s): IV & Unit Dose  -- Continuous                                           Page: 1

Patient:  CONNECTICUT,BCPATIENT          SSN:      509-68-0007      DOB:   DEC 3,1958 (40)
Sex:      MALE                           Ht/Wt:    */*              Ward:  BCMA Rm A427-03
Dx:       CHEST PAIN                     Last Mvmt: APR 8,1999@14:14:45  Type:  SPECIALTY TRANSFER

Reactions:  STRAWBERRIES
================================================================================================
Self                                                            Last      Start   Stop   Verifying
Med   Sched  Medication                   Dose                  Given     Date    Date   Rph/Rn
------------------------------------------------------------------------------------------------
      UD-C   ARTIFICIAL TEARS SOLN,OPH
             *ARTIFICIAL TEARS /ML (7021)
             Spec Inst: WHILE AWAKE       Give: 2 DROPS
                                          0600-0800-1000-1200-1400-1600-1800-
                                          2000-2200
                                          Admin Times: 0800-1000    07/23/99@0824 07/12/99 08/11/99 KB/***
------------------------------------------------------------------------------------------------
      UD-C   CLOTRIMAZOLE CREAM,TOP
             *CLOTRIMAZOLE 1% CREAM /GM (7071)
             Spec Inst: SMALL AMOUNT TOPICALLY
             TO AREA                      Give:   QID
                                          Admin Times: 0900         07/21/99@1601 07/12/99 08/11/99 KB/***
------------------------------------------------------------------------------------------------
      UD-C   MULTIVITAMINS TAB
             *MULTIVITAMIN TAB (5512)
             Spec Inst: <None Entered>    Give: 20meq  QOD
                                          Admin Times: 0900         07/26/99@0842 07/26/99 08/25/99 KB/***
------------------------------------------------------------------------------------------------




                                    Changes/Addendums to orders
------------------------------------------------------------------------------------------------

  CON ___ PRN ___  Drug: _____  Give: _____  Start: _____  Stop: _____
                   Spec
  OT ___ OC ___   Inst: _____  Initials: _____ Date: _____
------------------------------------------------------------------------------------------------

  CON ___ PRN ___  Drug: _____  Give: _____  Start: _____  Stop: _____
                   Spec
  OT ___ OC ___   Inst: _____  Initials: _____ Date: _____
------------------------------------------------------------------------------------------------
------------------------------------------------------------------------------------------------
================================================================================================
CONNECTICUT,BCPATIENT                        509-68-0007                  Ward: BCMA  Room-Bed: A427-03
```

3.6 Medication Administration History (MAH)

The electronic MAH can be printed for a specified date range for a single patient or a ward and shows medications that have been marked as Given, Held, or Refused.

☛ The report prints a 7-day history, running from Sunday to Saturday. For example, if the user enters Start and Stop Dates that fall in the middle of a week, the report will show the medication history from the previous Sunday to the following Saturday.

See Section 3.2, Using ScreenMan Format to Request a Report, for instructions on requesting a Missed Medications Report.

Exhibit 10, Medication Administration History by Patient Report, shows an example of the MAH report.

EXHIBIT 10: MEDICATION ADMINISTRATION HISTORY BY PATIENT REPORT

```
==============================================================================================================
Continuing/PRN/Stat/One Time Medication/Treatment Record (VAF 10-2970 B, C, D)
Run Date: JUL 26, 1999@10:53
                                                                                                    Page: 1

Patient:  KZTAAR,*TEST*KEITH D         SSN:       408-02-9578         DOB:    JAN 2,1941 (58)
Sex:      MALE                         Ht/Wt:     */*                 Ward:   BCMA Rm A427-02
Dx:       PNEUMONIA                    Last Mvmt: APR 8,1999@14:07:51  Type:   SPECIALTY TRANSFER

Reactions:  STRAWBERRIES
==============================================================================================================
Start       Stop        | Admin |          |          |          |          |          |          |
Date        Date        | Times | 04/11/1999 | 04/12/1999 | 04/13/1999 | 04/14/1999 | 04/15/1999 | 04/16/1999 | 04/17/1999
--------------------------------------------------------------------------------------------------------------
04/14/1999  05/14/1999  24:00  | 0500  |          |          |          | 0519 N2  | 0515 N2  |          |
ACETAMINOPHEN TAB              | 1100  |          |          |          | R1130 N2 | H1146 N2 |          |
   ACETAMINOPHEN 325MG TAB     | 1700  |          |          |          | 1729 N3  | 1746 N3  |          |
Give: 650MG PO Q6H             | 2300  |          |          |          | 2255 N3  | 2310 N3  |          |
                               |       |          |          |          |          |          |          |
                               |       |          |          |          |          |          |          |
                               |       |          |          |          |          |          |          |
 RPH: P2  RN: N2               |       |          |          |          |          |          |          |
--------------------------------------------------------------------------------------------------------------
04/13/1999  04/23/1999  24:00  | 0500  |          |          | 1324 N2  |          | 1400 N2  |          |
AMOXICILLIN CAP,ORAL           | 1300  |          |          |          |          |          |          |
   AMOXICILLIN 250MG CAPS Give:| 2100  |          |          |          |          |          |          |
250MG PO Q8H                   |       |          |          |          |          |          |          |
 Spec Inst: FOR 10 DAYS ONLY   |       |          |          |          |          |          |          |
                               |       |          |          |          |          |          |          |
                               |       |          |          |          |          |          |          |
 RPH: P2  RN: N2               |       |          |          |          |          |          |          |
--------------------------------------------------------------------------------------------------------------
04/13/1999  05/13/1999  24:00  | 0600  |          |          |          | 0913 N2  | 1325 N3  |          |
ARTIFICIAL TEARS SOLN,OPH      | 0800  |          |          |          | 1400 N2  | 1330 N2  |          |
   ARTIFICIAL TEARS /ML Give: 2| 1000  |          |          |          |          | 1400 N2  |          |
GTTS OPH                       | 1200  |          |          |          |          | 1401 N2  |          |
0600-0800-1000-1200-1400-1600- | 1400  |          |          |          |          |          |          |
-1800-2000-2200                | 1600  |          |          |          |          |          |          |
 Spec Inst: WHILE AWAKE        | 1800  |          |          |          |          |          |          |
 RPH: P2  RN: N2               | 2000  |          |          |          |          |          |          |
                               | 2200  |          |          |          |          |          |          |
--------------------------------------------------------------------------------------------------------------
```

3.7   Missing Dose Request

This option allows the user to submit a Missing Dose Request to Pharmacy using the screen
illustrated in Exhibit 11, Missing Dose Request Screen. Once submitted, the request prints on a
predefined printer and an electronic MailMan message is sent to the predefined mail group.

EXHIBIT 11: MISSING DOSE REQUEST SCREEN

To enter a Missing Dose Request, perform the following steps:

1.   In the Patient Name field, type the patient's name, and press **<Enter>**
2.   In the Ward Location field, type the ward designation, and press **<Enter>**.
3.   In the Missing Drug field, type the medication, and press **<Enter>**.

☛   To view a list of appropriate formats for the Missing Drug field, type a **?** in the Missing
      Drug field and press <**Enter**>. Explanation of the ways to enter a medication will display
      on the bottom part of the screen.

4.   In the Dose Needed: field, type the dose, and press **<Enter>**.
5.   In the Reason Needed: field, type a reason, and press **<Enter>**.

☛   To view a list of allowable reasons, enter a **?** on the Reason Needed field, and press
      <**Enter**>. A list will display in the bottom part of the screen.

6. In the Administration Date/Time field, type in a date and time, and press **<Enter>**.
7. In the Needed by Date/Time: field, type in a date and time, and press **<Enter>**.
8. In the COMMAND field, type **S** for Save, **E** for Exit, or **R** to Refresh the screen, and press **<Enter>**.

☛ If the user tries to exit the screen and the data has not been saved, the system will display the following message: Save changes before leaving form (Y/N)?. If the user enters **N**, the data will not be saved. If the user enters **Y**, the changes will be saved. The menu selection screen will display with a message confirming that the request has been submitted to Pharmacy via the appropriate mail group, as shown in Exhibit 12, Missing Dose Request Confirmation Screen.

EXHIBIT 12: MISSING DOSE REQUEST CONFIRMATION SCREEN
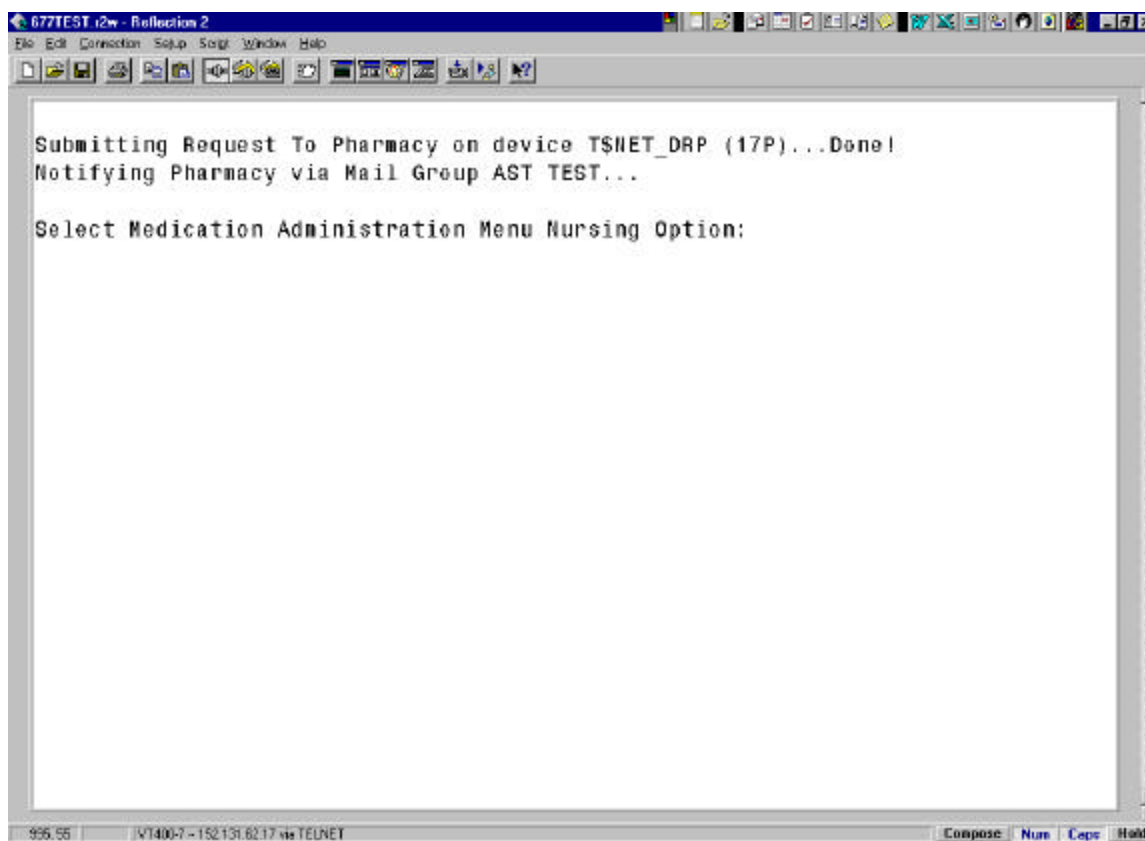
The Missing Dose Request will print on the designated printer. The e-mail message that is
generated appears as shown in Exhibit 13, Missing Dose E-mail Notification

EXHIBIT 13: MISSING DOSE E-MAIL NOTIFICATION

```
MailMan message for TUCKER,CHRIS  PHARMACIST
Printed at TOPEKA.MED.VA.GOV  11 Jun 99 11:26
Subj: BCMA - Missing Dose Request  [#8209824] 10 Jun 99 09:05  14 Lines
From: CARLSON,RUSSELL - R.N. (118)  in 'WASTE' basket.   Page 1
------------------------------------------------------------------------


   REQUEST NUMBER:.............MD-19990610-090536
   DATE/TIME ENTERED:.........APR 1, 1999@09:05:36
   ENTERED BY:................CARLSON,RUSSELL
   DIVISION:..................TOPEKA, KS
   SENT TO MAILGROUP:.........BCMA BETA TEST
   PRINTED ON DEVICE:.........T$LTA348 INP NORTH (D18-48)
   PATIENT:...................KZTAAR,*TEST*KEITH D
   WARD LOCATION:.............BCMA
   DRUG REQUESTED:............ACETAMINOPHEN 325MG TAB (263)
   DOSE NEEDED:...............650 MG
   REASON NEEDED:.............DROPPED
   ADMINISTRATION DATE/TIME:...APR 1, 1999@16:43
   NEEDED BY DATE/TIME:.......APR 1, 1999@1700


Select MESSAGE Action: IGNORE (in WASTE basket)//
```

3.8 Missing Dose Follow-up

The Missing Dose Follow-up allows Pharmacy to electronically respond to a Missing Dose
Request submitted by Nursing. Pharmacy can enter a reason the dose was missing, the time the
dose was delivered, and who delivered the dose.

To create a Missing Dose Follow-up message, perform the following steps:
1. In the Select Missing Dose Request field of the screen illustrated by Exhibit 14, Missing
    Dose Follow-up Screen, select the missing dose number from the list provided, and press
    <Enter>.

EXHIBIT 14: MISSING DOSE FOLLOW-UP SCREEN

2. The Missing Dose Request Pharmacy Follow-up Information screen will appear, as shown in Exhibit 15.

EXHIBIT 15: MISSING DOSE REQUEST PHARMACY FOLLOW-UP INFORMATION SCREEN

4. In the Dose Delivered field, type **Yes,** and press **<Enter>**.

☛   There may be instances where a missing dose is requested for an item that is no longer active. If the medication is no longer an active order or will not be delivered, enter **No** in this field.

5. In the Delivery Date/Time field, type **N** for Now or the date and time that the dose was delivered, and press **<Enter>**.
6. In the Pharmacy Reason Needed field, type a number that corresponds to a selection in the Exhibit 16, Pharmacy Reasons Needed Selection Table.

EXHIBIT 16: PHARMACY REASONS NEEDED SELECTION TABLE

1	WS/FILL ON REQUEST
2	FOUND IN DRAWER
3	PHARMACIST ERROR
4	EXPIRED/NO ORDER

5	ATC ERROR
6	NOT ENOUGH PRNS
7	TECHNICIAN ERROR
8	ON PRE-EXCHANGE/PICK LIST
9	PATIENT TRANSFERRED
10	NURSE ADMIN ERROR

7. In the COMMAND field, type **S** to Save, **E** to Exit, or **R** to Refresh, and press **<Enter>**.

☛   If the user tries to exit the screen and the data has not been saved, the system will display
the following message: Save changes before leaving form (Y/N)?. If the user enters **N**, the
data will not be saved. If the user enters **Y**, the changes will be saved. The system confirms
that the information has been saved and returns the user to the Select Medication
Administration Menu Pharmacy Option.

3.9 Missing Dose Report

The Missing Dose Report provides information about missing doses that were submitted by ward or for all wards. To request a Missing Dose Report, use the screen illustrated in Exhibit 17, Missing Dose Report Request Screen.

EXHIBIT 17: MISSING DOSE REPORT REQUEST SCREEN

1. In the Start Date field, type in the start date of the report, and press <**Enter**>. (The cursor will move to the next field each time <**Enter**> is pressed.)

☛ To display a list of standard date and time formats, enter **?** in any date or time field, and press <**Enter**>.

2. In the first At field, type the start time of the report (in HHMM format), and press <**Enter**>.
3. In the Stop Date field, type in the stop date, and press <**Enter**>.
4. In the second At field, type the stop time (in HHMM format), and press <**Enter**>.
5. At the Ward (Return for All) field, type in the desired ward and press <**Enter**>. To select all wards, do not enter a specific ward; just press <**Enter**>

A sample report is shown in Exhibit 18, Missing Dose Report.

EXHIBIT 18: MISSING DOSE REPORT

```
====================================================================================================
MISSING DOSE REPORT FROM APR 14, 1999@00:01 thru APR 17, 1999@24:00               Run Date: JUL 26, 1999@12:02
SELECTED WARDS                                                                                      Page: 1
====================================================================================================
Ward Location                    Medication                            Total
----------------------------------------------------------------------------------------------------


BCMA                             ACETAMINOPHEN 325MG TAB                   2
                                 ACETAMINOPHEN 500MG CAPLET                1
                                 ALPRAZOLAM 1MG TAB                        1
                                 AMOXICILLIN 250MG CAPS                    1
                                 ASCORBIC ACID 500MG TAB                   1
                                 DIAZEPAM 10MG TAB                         2
                                 DIGOXIN 0.05MG/ML ELIX (60CC)             1
                                 DIGOXIN 0.125MG TAB                       3
                                 DIPHENHYDRAMINE 25MG CAP                  1
                                 DOCUSATE SODIUM 100MG CAP                 1
                                 FUROSEMIDE 20MG TABS                      2
                                 HALOPERIDOL 2MG TAB                       1
                                 HALOPERIDOL CONCENTRATE 2MG/ML (ML)       1
                                 HALOPERIDOL DECANOATE 100MG/ML INJ /ML    1
                                 HYDROCORTISONE 1% CREAM /GM               1
                                 INSULIN REGULAR (HUMULIN) U-100 10ML      1
                                 IPRATROPIUM BROMIDE INHALER              17
                                 MULTIVITAMIN TAB                          1
                                 OXYCODONE 5MG/APAP 325MG TAB              1
                                 OXYCODONE 5MG/APAP 325MG TAB UD           1
                                 PROCHLORPERAZINE 10MG TAB                 4
                                 PROCHLORPERAZINE INJ 5MG/ML (ML)          2
                                 RESERPINE 0.1MG TAB                      17
                                 THEOPHYLLINE 125MG TAB                    1
                                                                      --------
                                 Ward BCMA Total:                         65
                                                                      ========
            Report Total:                65
```

3.10 Label Print

The Label Print option allows Pharmacy to create bar coded medication labels using a Zebra printer. Exhibit 19, Bar Code Label Screen, illustrates the screen used to create bar code labels.

EXHIBIT 19: BAR CODE LABEL SCREEN

To create bar code labels, perform the following steps:

☛   The Drug Name, Filled By, and Checked By fields are required.

1. In the Lot # field, enter the Lot #, and press **<Enter>**.
2. In the Expiration Date field, enter a date, and press **<Enter>**.
3. In the Manufacturer field, enter the manufacturer's name, and press **<Enter>**.
4. In the Quantity field, enter a quantity between 0.25 and 9999 (up to two decimal places), and press **<Enter>**.
5. In the Filled By field, type your initials, and press **<Enter>**.
6. In the Checked By field, type your initials, and press **<Enter>**.

☛   If it is unknown who will fill or check the order, enter three underscores in the Filled By or Checked By fields, and press <**Enter**>. This will give someone space to initial the label at a later time.

7. In the # Labels field, type the number of labels needed between 1 and 999, and press **<Enter>**.

8. In the Patient Name field, type the patient's name, and press **<Enter>**.
9. In the Dosage field, enter a dosage and press **<Enter>.**

☛   The Dosage field will accept entries from two to 30 alpha/numeric characters.

10. In the Print to Device field, type the Zebra printer assigned to the ward, and press **<Enter>**.
11. In the Queue to Run At field, enter a date and time, and press **<Enter>**.
12. In the <RET> Re-Edit field, press **PF1 - E** to print the label, **PF1 - Q** to Quit or **PF1 - R** to Refresh the screen.

A sample label is shown in Exhibit 20, Sample Bar Code Label.

EXHIBIT 20: SAMPLE BAR CODE LABEL

Drug: BECLOMETHASONE INHALER

                             KZTAAR,*TEST*KEITH D
                             Ward: BCMA

    1644   **Filled /Checked By**; CLT/CLT

3.11 Drug File Inquiry

The Drug File Inquiry allows Pharmacy to check the bar code IEN numbers listed on dispensed unit dose drugs. If the incorrect bar code is affixed, the Drug File Inquiry will help the user resolve the discrepancy. The screen illustrated in Exhibit 21, Drug File Inquiry Screen 1 is used to run a Drug File Inquiry.

☛ The IEN number appears on the first line of the screen next to the drug name. Any additional synonyms that have been loaded also appear under the Synonym heading of this option.

EXHIBIT 21: DRUG FILE INQUIRY SCREEN 1
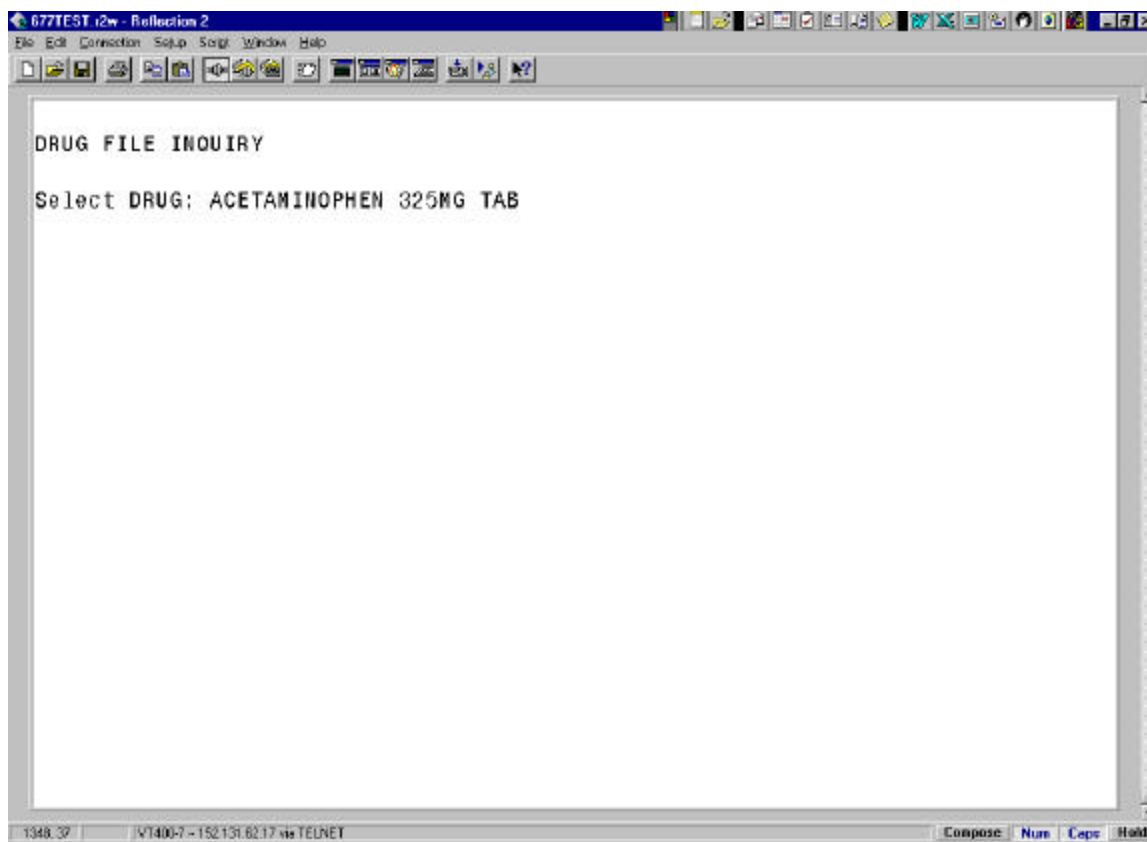
To run a Drug File Inquiry, perform the following steps:
1. In the Select Drug field, type the name and dosage of the drug, and press **<Enter>**.

☛ Type the IEN number from the Due List or the name of the drug using either the trade name or the generic name. To display a list of standard formats for drug names, enter **?** in the Select Drug field, and press <**Enter**>.

2. The Drug File information will display as illustrated in Exhibit 22, Drug File Inquiry Screen 2.

EXHIBIT 22: DRUG FILE INQUIRY SCREEN 2

```
677TEST.r2w - Reflection 2                                          _ □ ×
File  Edit  Connection  Setup  Script  Window  Help

 ┌─────────────────────────────────────────────────────────────────┐
 │                                                                   │
 │  DRUG NAME: ACETAMINOPHEN 325MG TAB  (IEN: 263)                   │
 │  ----------------------------------------------------------------- │
 │                                                                   │
 │  PRICE PER DISPENSE UNIT:      0.004                              │
 │  NATIONAL DRUG CLASS:          CN103                             │
 │  NON-FORMULARY:                                                   │
 │  QUANTITY DISPENSE MESSAGE:    DISPENSE IN MULTIPLES OF 100       │
 │  CMOP DISPENSE:                YES                                │
 │  MESSAGE:                      90 DAY FILL *ATC A/B*              │
 │                                                                   │
 │  SYNONYMS:                                                         │
 │              APAP                      TYLENOL                    │
 │              ACET325                   000677000100               │
 │              051111048893                                         │
 │                                                                   │
 └─────────────────────────────────────────────────────────────────┘
  415, 42      VT400-7 -- 152.131.62.17 via TELNET      Compose  Num  Caps  Hold
```

☛ The IEN is unique to this drug file entry. In most cases, it is the bar coded number on the unit dose packages that are created in the Pharmacy. Manufacturers National Drug Code (NDC) bar codes may appear in the synonym field of this display. If the drug is non-formulary, this field will be set to N/F.

4 GLOSSARY

This section contains acronyms and definitions for terms used in this document.

4.1 Acronyms

BCMA	Bar Code Med Admin
CHUI	Character-based User Interface
CPRS	Computerized Patient Record System
GUI	Graphical User Interface
HFS	Host File Server
HSM	Hospital supplied self-medications
IEN	Internal Entry Number
MAH	Medication Administration History
N/F	Non-formulary
NCD	National Drug Code
PC	Personal computer
PRN	Pro Re Nata [Latin]
SM	Self-medications
TCP/IP	Transmission Control Protocol/Internet Protocol
VA	Department of Veterans Affairs
VAMC	Veterans Affairs Medical Center
VDL	Virtual Due List
VHA	Veterans Health Administration
VISN	Veterans Integrated Services Network
V*IST*A	Veterans Health Information Systems and Technology Architecture

4.2 Definitions

Audits	Tracking changes to records including old data, new data, and the name of the user who made the change.
BCMA	Bar Code Med Admin is a V*IST*A software application that validates medications against active orders prior to being administered to the patient.
CPRS	The Computerized Patient Record System is a V*IST*A software application that provides an integrated patient record system for use by clinicians, managers, quality assurance staff, and researchers.

Given	When a medication is administered to the patient, it is considered Given.
HFS	Host File Server is a system (WinNT/Dec Alpha) file access mechanism that enables the M software to access the system-level files.
IEN Drug Code	The internal drug number (IEN) that is entered into Inpatient Medications V. 5.0
Not Given	A medication that is intentionally Not Given for a specified reason.
Omitted	A medication that was not given during the medication pass because it was unintentionally missed.
PRN	Latin abbreviation for *pro re nata* meaning "as needed."
ScreenMan	VA FileMan's ScreenMan utility provides a screen-oriented interface for editing and displaying data.
SRS	Document which outlines the functional requirements for a project.
TCP/IP	A protocol developed by the Department of Defense for communications between computers. TCP/IP has become the standard for data transmission over networks, including the Internet.
VA FileMan	V*ISTA*'s database management system.
VDL	The Virtual Due List is a GUI application used by nurses when administering medications.

INDEX